

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**

N° 24,331



A.D. 1910

Date of Application, 20th Oct., 1910—Accepted, 10th Aug., 1911

COMPLETE SPECIFICATION.

Improvements in the Method of Forming Tube Joints.

I, HERMANN HESS-HONEGGER, of Rüti, Zürich, Switzerland, Gentleman, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

5 This invention relates to improvements in that type of tube joints which are formed of metal cast into the tube ends to be connected together, one of the said tubes being provided with holes to allow the metal cast in to penetrate the walls of the tube and form stud-like projections, and the object of my invention is to simplify and render such joints more secure and durable than hitherto has been the case.

10 The invention consists in forming a cast metal joint in which the end of one tube abuts against the exterior of another tube (or plate) or the ends of two tubes abut against each other and in forming holes in one or both of the tube ends respectively into which the metal cast in runs to form studs which prevent the tube or tubes turning or leaving the said metal joint.

15 And in order that my invention may be more fully understood I have caused to be appended hereunto one sheet of drawings marked with letters of reference.

Figs. 1 to 3 are sectional views and each showing one embodiment of my improved method.

20 In carrying out my invention and referring to Fig. 1, which shows the tube *c* connected to the side of another tube *f* (or plate), the former is made to abut against the side of the latter and furnished with holes *g* while the tube *f* (or plate) in front of the end of the tube *c* has also a hole *h*.

25 The metal joint projects from the end of the tube *c* through the hole *h* into the tube *f* (or outside in the case of a plate) where it forms a head, while inside the tube *c* it projects stud like into the holes *g* which prevents the tube *c* from turning on or leaving the joint.

In the embodiment shown in Fig. 2, two tubes are connected to one tube (or plate) in the same manner as shown in Fig. 1.

30 In the embodiment shown in Fig. 3, two tubes *k*, *k'* are joined at right angles to each other. Each tube is provided with two holes *g'* into which studs project from the cast joint inside the tubes. As may be seen the cast joint passes from one tube into the other and each part forms a head for the other.

35 Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

40 In a tube joint of the type hereinbefore referred to, forming holes in the wall of the tube end to be secured to the side of a tube (or plate) with edge abutting against it, or in the case of two tube ends with edges to abut against each other, holes in the walls of both of them which holes the metal cast into the tubes enters to form studs engaging the tube ends, substantially as and for the purpose set forth.

Dated this 19th. day of October, 1910.

F. BOSSHARDT & Co.,  
4, Corporation Street, Manchester,  
Agents to Applicant.

287-189.36H

55

403/265

287-189.36H

1910

TION

Fig1.

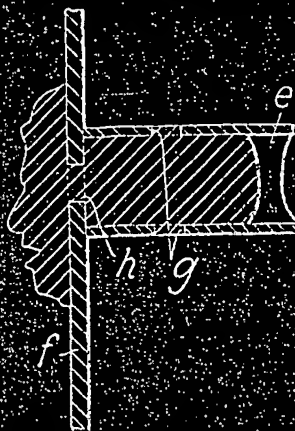


Fig.2.

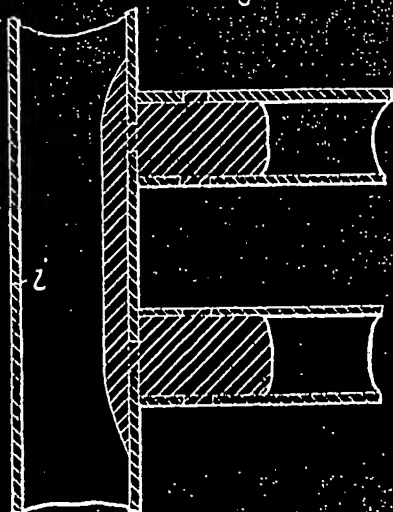
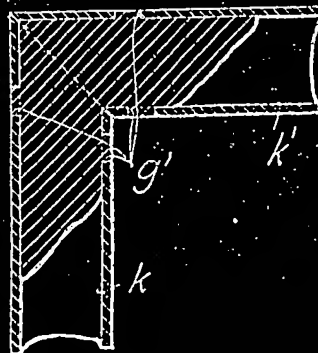


Fig.3.



[This Drawing is a reproduction of the Original on a reduced scale]